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20 February 2015

Mr. Adam Laputz, Assistant Executive Officer
Ms. Gayleen Perreira, Senior WRCE
Mr. Josh Palmer, WRCE
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission
Hardcopy if Requested

RE: Renewal of Waste Discharge Requirements (NPDES No. CA0081612) for Nevada County Sanitation District No. 1 Lake of the Pines Wastewater Treatment Plant

Dear Messrs. Laputz, Palmer and Ms. Perreira,

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Waste Discharge Requirements (NPDES No. CA0081612) for the Nevada County Sanitation District No. 1 Lake of the Pines Wastewater Treatment Plant (Draft Permit) and submits the following comments.

CSPA requests status as a designated party for this proceeding. CSPA is a 501(c)(3) public benefit conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's water quality and fishery resources and their aquatic ecosystems and associated riparian habitats. CSPA has actively promoted the protection of water quality and fisheries throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore California's degraded water quality and fisheries. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley, including Nevada County.

1. The Fact Sheet fails to comply with 40 C.F.R § 124.8 and 40 C.F.R § 124.56 because it contains an inadequate description of the wastewater treatment system and is therefore insufficient to defend inclusion of technology and water quality based discharge limitations or defend any decisions based on best professional judgment.

Federal regulations require that the Regional Board provide a fact sheet which includes "the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the permit." (40 C.F.R. § 124.8.) This includes a description of the facility or activity which is the subject of the draft permit; the types and quantities of wastes, fluids, or pollutants treated or discharged; the basis for the draft permit conditions; reasons why

any requested variances or alternatives to required standards do or do not appear justified; any calculations or explanations of the derivation of specific effluent limitations and conditions or standards; an explanation of how alternate effluent limitations were developed; an explanation of the reasons that the permit contains limitations to control toxic pollutants, limitations on indicator pollutants, and limitations set on a case-by-case basis; an explanation regarding waivers from monitoring requirements; a detailed description of the location of the discharge or regulated activity. (40 C.F.R. §§ 124.8, 124.56.)

The fact sheet fails to provide an adequate description of the wastewater treatment system in violation of the federal regulations. Page F-4 of the Fact Sheet states that:

> The treatment system at the Facility consists of a headworks with course screening followed by fine screening. The treatment and filtration portion of the system consists of treatment tanks used for BOD reduction, nitrogen removal, phosphorus removal and solids separation. Solids separation is accomplished using a Microfiltration Membrane Bioreactor (MBR) system (0.4 microns pore size) that is immersed in the activated sludge mixed liquor. Treated effluent is pumped through the membranes by vacuum created by a series of permeate pumps. The MBR system provides the required tertiary treatment with effluent turbidities less than 1 NTU. The biological treatment system is configured in two identical parallel treatment trains so that a single train can be taken off-line for maintenance during the dry months of the year. The disinfection portion of the system uses ultraviolet light (UV) disinfection.

The Draft Permit fails to provide an adequate description of the facility and treatment process. It is impossible to predict the capabilities and effluent quality from "treatment tanks." Secondary wastewater treatment systems generally consist of settling and biological treatment by activated sludge, aerated lagoons, aerobic granulation, membrane bioreactors, rotating biological contactors, trickling filters or other common civil engineering technologies. Each treatment technology has its merits and it is possible to predict, based on best professional judgment and the design parameters, the capability of the treatment system. The physical, chemical and biological processes are well established for each process and well documented in Civil Engineering texts. Applications for renewal of NPDES permits require submittal of a complete description of treatment practices and plant design. NPDES permits should not be written and submitted for public review absent a complete application. The proposed Permit is either based on an incomplete application or the Regional Board failed to adequately describe the wastewater treatment process, methods and capabilities.

The Regional Board also failed to provide the relevant data in support of the effluent limitations and monitoring requirements. There is almost no data provided regarding past effluent test results or the receiving water. There is no explanation regarding the reasonable potential analyses except for a limited number of constituents, making it impossible for interested parties to evaluate whether the reasonable potential analysis was even done for the other constituents, or, if it was done, if the analysis was done correctly and the resulting determinations were justified.

Further, on page F-13 the Regional Board states that it ignored effluent data from November 7, 2012 based on cleaning of the system with bleach during the testing period (although no data on the actual date of the cleaning is provided). On this basis, the Regional Board ignored testing

data for antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury, but provided no explanation as to how the use of bleach would result in increased levels of these other constituents. Moreover, while the discharger may divert the effluent the day following the cleaning to the storage ponds, the water in the storage ponds returns to the system to be eventually discharged to Magnolia Creek. The Regional Board has therefore not provided an explanation why the effluent should not be tested for those constituents for which there is data indicating elevated levels of these substances, even assuming those substances are indeed a result of the cleaning of the system.

It is impossible to write meaningful comments on the proposed Permit absent this critical information. The public cannot have confidence in the capability or reliability of a "black box technology" or analysis purportedly done on testing data allegedly available but not provided.

2. The Draft Permit contains an effluent limitation for nitrate plus nitrite that alone is not protective of the Domestic and Municipal beneficial uses of the receiving water, fails to implement the Chemical Constituents water quality objective for nitrite of the Basin Plan, and fails to contain an adequate effluent limitation in accordance with Federal Regulations 40 C.F.R. section 122.44 and section 13377 of the California Water Code.

Section 122.44(d) of Title 40 of the Code of Federal Regulations requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. The federal Drinking Water Maximum Contaminant Levels (MCLs) for nitrate (as nitrogen) are 10 mg/L and 1.0 mg/L (as nitrogen) for nitrite. (http://water.epa.gov/drink/contaminants/index.cfm).

Section 13377 of the California Water Code mandates that "the state board or the regional boards shall…issue waste discharge requirements…which apply and ensure compliance with …water quality control plans, or for the protection of beneficial uses…" The Basin Plan requires that, *at a minimum,* water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs specified in section 64431 of Title 22 of the California Code of Regulations. (Basin Plan at III-3.00.) California's MCLs are 10 mg/L for nitrite and nitrate combined (as nitrogen) and 1.0 mg/L (as nitrogen) for nitrite. (22 C.C.R.; §64431; http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/dwregulations-2014-07-01.pdf)

The Draft Permit at page F- 24 presents a discussion of nitrate and nitrite which states in part that:

> Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the Primary MCL would violate the Basin Plan narrative chemical constituent's objective. Although the Discharger denitrifies the discharge, inadequate or incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the

> Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBEL's are required.

Despite the recognition that "[r]easonable potential for nitrate and nitrite therefore exists and WQBEL's are required" (page F-23), and the acknowledgement that the limitation for nitrite is applicable (page F-22), the draft permit inexplicitly imposes an effluent limitation only for nitrate plus nitrite, and not for nitrite alone.

By including a limitation only for nitrate plus nitrate of 10 mg/L the Regional Board has neither complied with federal and state laws nor protected the beneficial use of Magnolia Creek as a municipal water supply. The limitation for nitrite alone under both federal and state standards is 1.0 mg/L. Thus, under the limitation imposed in the draft permit the effluent could violate the limitation for nitrite by ten-fold but still be in compliance with the permit's effluent limitation.

Moreover, the data the Regional Board provides in the draft permit is inadequate. The draft permit states that "Based on monitoring data collected between November 2010 and March 2014, the maximum observed monthly average nitrate plus nitrite concentration was 3.6 mg/L. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible." (Draft Permit at F-24.) Nitrate plus nitrite test results typically indicate the levels of nitrate and nitrite individually. Yet the Draft Permit does not state whether the effluent sample containing 3.6 mg/L was nitrate or nitrite, and does not provide nitrite effluent data elsewhere in the Fact Sheet.

The Regional Board's discussion of the need for effluent limitations for nitrate plus nitrite is just as applicable for nitrite alone. Indeed, the Regional Board concedes that there is a reasonable potential for nitrite to contribute to an exceedance of the MCL for nitrite, yet the Draft Permit only contains an effluent limitation for nitrate plus nitrite of 10 mg/l. "A finding that a 'reasonable potential' exists means the Regional Board *must* limit or prohibit the discharge of that constituent." (State Board Order WQO 2004-0013 (emphasis added).)

Nitrite presents a reasonable potential to exceed water quality standards in the effluent (Fact Sheet pages F-22, 23 and 24). Failure to include an effluent limitation for nitrite in the proposed permit violates Title 40, section 122.44 of the Code of Federal Regulations, California Water Code section 13377, Title 22 section 64431 of the California Water Code, federal MCLs for nitrite, State Water Board Resolution No. 88-63, and the Basin Plan. The Regional Board is therefore required to include an effluent limitation for nitrite alone.

3. The Draft Permit, Receiving Water Limitation No. 15, allows for a monthly averaging period contrary to the requirements of the Basin Plan.

California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." The Basin Plan, page III-8.00, Water Quality Objective for Temperature, states in part that: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the

Regional Water Board that such alteration in temperature does not adversely affect beneficial uses" and that "[i]n determining compliance with the water quality objectives for temperature, appropriate averaging periods may be *applied provided that beneficial uses will be fully protected*."

Magnolia Creek has beneficial uses of warm and cold freshwater habitat, wildlife habitat, warm and cold migration of aquatic organisms, and warm and cold spawning, reproduction, and/or early development. (Draft Permit at F-6.) The presence of salmonids and early fish life stages in Magnolia Creek is well-documented. (*Id.*) It is well-established, and well-known to the Regional Board, that temperature is one of the most important environmental influences on salmonid biology. (See, e.g., *The Effects of Temperature on Steelhead Trout, Coho Salmon, and Chinook Salmon Biology and Function by Life Stage,* attached to these comments.) "Most aquatic organisms, including salmon and steelhead, are poikilotherms, meaning their temperature and metabolism is determined by the ambient temperature of water." (*Id.*) Temperature impacts "growth and feeding rates, metabolism, development of embryos and alevins, timing of life history events such as upstream migration, spawning, freshwater rearing, and seaward migration." (*Id.*) It can affect the availability of food, attract predators, and can cause stress and even death. In addition, the Draft Permit acknowledges that the U.S. EPA found that as pH and temperature increased, both the acute and chronic toxicity of ammonia increased for invertebrates. (Draft Permit at F-19.)

Yet the Draft Permit addresses none of this. Instead, the Regional Board actually relaxed the temperature requirements. The Draft Permit at page F-37, paragraph b, states that:

> Order R5-2009-0031 included an effluent limitation for temperature based on the Basin Plan objective, which requires that discharges shall not cause "[t]he natural temperature to be increased by more than 5°F." This Order allows for a 1-month averaging period, which should account for short-term intermittent temperature changes attributed to natural stream effects such as upstream dam releases.

The Regional Board has failed to show that "beneficial uses will be fully protected" with regards to temperature. Without a showing that beneficial uses will be protected, there is no justification for a relaxation of the temperature effluent limitation and allowing a monthly averaging period. The Draft Permit is silent with regard to protecting the beneficial uses with regard to temperature and the allowance for a monthly averaging period. The Regional Board's NPDES permit for the City of Placerville, Order No. R5-2014-0015-01, contains site-specific numeric temperature limitations based on the protection of cold water aquatic life and therefore allows for an averaging period. The Draft Permit recognizes that cold/warm water habitat, migrations, and warm/cold spawning, reproduction, and/or early development are beneficial uses of the receiving stream, yet contains no analysis or evidence of any kind regarding the impacts on aquatic life and habitat.

The Draft Permit's statement that the averaging period is allowed to account for temperature changes due to upstream dam releases does not justify an averaging period for the wastewater discharge. The discharger is required to take upstream temperature measurements, which would show that the temperature changes were not caused by the wastewater discharge. Moreover, the

Draft Permit lacks any information regarding the past temperature data the discharger was required to collect.

Without any evidence or discussion regarding the impacts to aquatic life and habitat there is simply no basis for the relaxation of the temperature limit and the allowance for an averaging period for temperature. The Regional Board must consider the impacts of the effluent on the designated beneficial uses of Magnolia Creek and downstream, and impose limitations that are demonstrated to "not adversely affect beneficial uses," or increase the receiving water temperate by more than 5ºF. (Basin Plan at III-8.00.)

4. The Draft Permit does not contain effluent limitations for chronic toxicity and therefore does not comply with 40 C.F.R.§ 122.44 (d)(1)(i) and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California ("SIP").

The Code of Federal Regulations, at Title 40, section122.44 (d)(1)(i), requires that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/San Joaquin River Basins (Basin Plan) contains a narrative toxicity criteria which states that "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.01.)

The State Implementation Plan ("SIP"), mandates that "[a] chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters." (SIP, section 4, "Toxicity Control Provisions.") California Water Code sections 13146 and 13247 require that the Regional Board in carrying out activities which affect water quality shall comply with state policy, including the SIP, for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. No statute authorizes the Regional Board to disregard the SIP's mandates.
The Draft Permit acknowledges the applicability of the State Implementation Policy on page F-7 of the permit:

> On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the [National Toxics Rule] and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the US EPA through the [California Toxics Rule]. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria, objectives, and provisions for chronic toxicity control.

The Regional Board's assertion that the Draft Permit implements the SIP (Draft Permit at F-7) is not supported by the facts or the terms of the Draft Permit. It is undisputed that domestic sewage contains toxic substances and presents a reasonable potential to cause toxicity if not properly treated and discharged. Yet, the Draft Permit requires no effluent limitations for chronic toxicity. Instead, all the Draft Permit includes is the following statements (on pages 12, 13 and 14 (emphasis added)):

- For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing
- Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.
- The discharge experienced intermittent and low level effluent chronic reproductive toxicity to *Ceriodaphnia dubia.*
- Subsequently, the Discharger in 2014 completed a TRE that was inconclusive, but suspected pathogen-related toxicity since the same pattern has been exhibited at other wastewater treatment facilities that employ ultraviolet disinfection systems. Therefore to identify the source of toxicity and effective control measures for effluent chronic reproductive toxicity to *Ceriodaphnia dubia*, the Discharger **may** conduct a toxicity evaluation study, individually or as part of a coordinated group effort with other dischargers, that evaluates low level and intermittent toxicity in effluent disinfected by an ultraviolet system and/or evaluate the toxic effects of low hardness effluent.
- When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring
- The numeric toxicity monitoring trigger to initiate a TRE is >1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.
- The Discharger submitted a TRE Workplan on 4 February 2014; therefore, a new TRE Workplan is not required as part of this Order.

The above statements indicate that toxicity has been observed in the wastewater discharge and has not been eliminated, despite previous studies. Obviously, the Regional Board's plan to prevent toxic discharges and comply with the Basin Plan narrative toxicity objective has not worked thus far at this discharge site, and a reasonable potential for the discharger to cause, or contribute to chronic toxicity in receiving waters exists, and a chronic toxicity effluent limitation is required pursuant to the SIP. (SIP, section 4.)

Domestic wastewater treatment plants, by their nature, contain numerous toxic constituents and present a reasonable potential to exceed the Basin Plan's narrative toxicity water quality objective. Even a well-maintained and operated wastewater treatment plant can experience upsets and bypass resulting in toxic discharges. Indeed, such an incident occurred at the Lake of the Pines Wastewater Treatment plant in January of 2012, releasing approximately 37,500 gallons of untreated sewage into Magnolia Creek containing pathogenic microorganisms toxic to humans and animals. Infrequent, monthly, or quarterly, toxicity testing is not sufficient to state

that a domestic wastewater treatment plant has not discharged toxic constituents in toxic concentrations during a five year life of an NPDES permit.

Many wastewater treatment systems have installed ultraviolet light disinfection systems. Now the Regional Board has realized that chlorine was a strong oxidizing agent which actually further reduced pollutants in the effluent wastestream. Page F-13 of the Draft Permit states that "the Discharger in 2014 completed a TRE that was inconclusive, but suspected pathogen-related toxicity since the same pattern has been exhibited at other wastewater treatment facilities that employ ultraviolet disinfection systems." The potential for regrowth of pathogens would have far reaching impacts to surface waters and reclamation sites throughout California, yet the Draft Permit simply allows for this Discharger to join in on a joint TRE investigation if they wish. The regrowth of pathogens would have the potential to significantly degrade numerous beneficial uses of the receiving stream, including freshwater aquatic life, contact recreational and irrigated agriculture uses, and domestic and municipal uses. The Draft Permit should be modified to require an immediate study of the surface waters downstream to determine if regrowth of pathogens is indeed occurring.

Instead of actually complying with the SIP's mandate to impose a chronic toxicity effluent limitation and a plan to eliminate toxicity, all the Draft Permit includes is a monitoring requirement and permission that the Discharger "may" conduct a study. The Proposed Permit states that "…to ensure compliance with the Basin Plan's narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing…" However, sampling does not equate with nor ensure compliance. The Draft Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Order. In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge.

The Draft Permit simply fails to comply with the applicable laws: by failing to include effluent limitations prohibiting chronic toxicity the Draft Permit does not "implement the SIP." The Regional Board has commented time and again for year after year that no chronic toxicity effluent limitations are being included in NPDES permit until the State Board adopts a numeric limitation. The Regional Board's "explanation," which is in reality an abdication of its duties to effectuate state and federal regulations, does not excuse the Draft Permit's failure to comply with Federal Regulations, the SIP, the Basin Plan and the California Water Code. The Basin Plan requires "…waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses" and the SIP requires that a chronic toxicity effluent limitation is required in cases, such as the one at hand, where there is a reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Accordingly, the Draft Permit must be revised to prohibit chronic toxicity (mortality and adverse sublethal impacts to aquatic life, (sublethal toxic impacts are clearly defined in EPA's toxicity guidance manuals)) in accordance with 40 C.F.R. § 122.44 (d)(1)(i), the Basin Plan, and the SIP.

5. The Regional Board's proposal to accept modification to the wastewater treatment system is inadequate and results in a significant change in the character of the discharge mandating submittal of a new revised Report of Waste Discharge (RWD) in accordance with federal regulations 40 C.F.R. sections 122.62(a)(1) and 122.42(b).

Code of Federal Regulations, Title 40, section 122.62 provides that when there are alterations or additions to a permitted facility or activity which justify the application of permit conditions that are different or absent in the existing permit there is cause for a modification of the permit. Code of Federal Regulations, Title 40, section 122.42(b) requires that Publicly Owned Treatment Works (POTWs) provide adequate notice when there is any new addition of pollutants into the POTW, or there is any anticipated change on the quantity or quality of effluent to be discharged from the POTW. The Draft Permit, page F-5, states that: "Due to concerns regarding chronic toxicity that may be associated with the UV disinfection system, the Discharger may construct upgrades to add peracetic acid (PAA) upstream of the UV disinfection to enhance disinfection at the Facility. This Order includes effluent monitoring for PAA when PAA is used in the treatment system."

Many impacts from the use of PAA would go undetected under the recommended "sampling" proposal. PAA is a very powerful oxidizing agent, stronger than either chlorine or chlorine dioxide. (http://www.lenntech.com/processes/disinfection/chemical/disinfectants-peracetic-acid.htm .) This could convert total metal concentrations to the more toxic dissolved form. The U.S. EPA explicitly states "[e]ven small changes in pH can shift community composition in streams because pH alters the chemical state of many pollutants, such as copper and ammonia, changing their solubility, transport, or bioavailability. This can increase exposure to and toxicity of metals and nutrients to aquatic plants and animals." (http://www.epa.gov/caddis/ssr_ph_int.html) Yet, there is no additional monitoring requirement for metals included in the draft permit. It also has a pH of 2.8. (http://www.lenntech.com/processes/disinfection/chemical/disinfectants-peracetic-acid.htm.) Although, if used absolutely correctly, PAA theoretically breaks down into non-toxic constituents, inadvertent human error can cause the use of this strong acid to alter the pH of the discharge, yet no additional pH monitoring is being required. Nor is additional chronic toxicity monitoring being required during the use of PAA although the addition of PAA is reportedly being used to reduce toxicity, and the discharge of PAA could itself cause aquatic toxicity.

The addition of a strong acid such as PAA, which in itself may be toxic to aquatic life, to the wastestream may have impacts far greater than the presence of PAA in the effluent, yet neither an effluent limitation for PAA itself or its likely byproducts is included in the permit. The Regional Board should require a full assessment of the possible water quality impacts of this action before simply allowing it to be added.

6. The Draft Permit is either based on an incomplete RWD contrary to Federal Regulations and the California Water Code, or the Fact Sheet is incomplete and does not comply with federal regulations.

The Reasonable Potential Analysis, Attachment H, discusses only seven pollutants including only one toxic metal, copper. It is difficult to believe that this is a complete list of all of the pollutants that have been detected during sampling of the wastewater discharge.

Federal Regulation, 40 C.F.R. § 122.21(e) states in part that: "The Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. In accordance with 40 CFR 122.21 (e) and (h) and 124.3 (a)(2) the Regional Board shall not adopt the proposed permit without first a complete application." State Report of Waste Discharge form 200 is required as a part of a complete Report of Waste Discharge. Form 200, part VI states that: "To be approved, your application must include a complete characterization of the discharge." The Federal Report of Waste Discharge forms also require a significant characterization of a wastewater discharge.

The California Toxics Rule (CTR) (40 C.F.R. § 131) contains water quality standards applicable to this wastewater discharge. The final due date for compliance with CTR water quality standards for all wastewater dischargers in California is May 2010. The State's *Policy for Implementation of Toxics standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), Section 1.2, requires wastewater dischargers to provide all data and other information requested by the Regional Board before the issuance, reissuance, or modification of a permit to the extent feasible. California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

The application for permit renewal is incomplete, and in accordance with 40 C.F.R. section 122.21(e) the Regional Board should not issue a permit. Federal Regulations, 40 C.F.R. section 124.8, requires that Fact Sheets contain the basis for the permit conditions. The proposed Permit also fails to comply with the State Board's precedential Order for Yuba City, which required the Fact Sheet contain the complete data set, which was the basis for effluent limitations. (See WQO 2004-0013 at 18.) Historic test data has not been included in the Fact Sheet, nor is there a reasonable potential analysis for most constituents, including those expected to be found in sewage treatment plant effluent such as those contained in Table E-9 of the Draft Permit, evident.

The Fact Sheet contains no information that supports the claim that a complete RWD has been submitted and that the wastewater discharge has been adequately characterized for priority and conventional pollutants. Either the Discharger has failed to submit a complete RWD contrary to the cited laws and regulations or the Fact Sheet is incomplete. The Draft Permit cannot be adopted if the RWD was incomplete, or must be amended to include a summary of the data characterizing the discharge and a factual basis for the effluent limitations, or the lack thereof.

7. The Draft Permit establishes effluent limitations for metals based on the hardness of the effluent as opposed to the lower upstream receiving water hardness as required by the California Toxics Rule (40 CFR 131.38(c)(4)).

The Regional Board has yet again failed to comply with the applicable laws and regulations regarding the determination of effluent limitations of hardness-dependent metals, despite repeatedly having the same methodology rejected by the State Board and courts. The Regional Board is required to ensure that effluent limitations for hardness-dependant metals are protective under all conditions, using the methodology mandated by the California Toxics Rule. Once again, it did not, and the effluent limitations must be recalculated in the manner required by law.

The California Toxics Rule, 40 C.F.R. § 131.38(c)(4), states that: "For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/l or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations." (Emphasis added.) The State Implementation Plan ("SIP") requires that the Regional Board "shall ensure that criteria/objectives are properly adjusted for hardness . . .using the hardness . . .values for the receiving water." (SIP at § 1.2.) "Effluent" does not mean "ambient," and the Regional Board cannot justify using the effluent hardness value, rather than the lower upstream receiving water hardness, to impose less stringent effluent limitations than those required under the CTR, SIP, and precedential State Board orders and court decisions.

Precedential decisions prohibit the methodology used by the Regional Board to determine the effluent limitations in the Draft Permit. In WQO 2004-0013 the State Board stated that the hardness "value selected should provide protection for all times of discharge under varying hardness conditions. Thus, it was appropriate for the Regional Board to use the worst-case observed minimum hardness." This rule was restated in WQO 2008-0008 when the State Board cited the overriding principle that "[e]ffluent limitations must protect beneficial uses considering reasonable, worst-case conditions" and "limits must always be protective of water quality criteria under all flow conditions." Just last year, the Regional Board's use of the same methodology it used in the Draft Permit was rejected by the Sacramento Superior Court, which reiterated that effluent limitations must protect beneficial uses under all circumstances. (Sacramento Superior Court Case No. 34-2013-80001358 at 9.)

The Draft Permit purports to have complied with these mandates. (Draft Permit at F-14 ("The Order established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP and the CTR.")(Emphasis added.)) This is false. The upstream ambient receiving water hardness varied from 44 mg/L to 112 mg/L."[1] (Draft Permit at F-15.) The effluent hardness varied from 48 mg/L to 128 mg/L.[2] (Draft Permit at F-15.) The

[1] The Proposed Permit states that this was based on just four samples from March 2, 2012 to November 7, 2012. There is no explanation given as to why there were only these four samples or whether there were additional samples. The Regional Board is required explain the basis for its decisions, including the data relied upon.

[2] The prior order required receiving water monitoring 50 feet upstream from Discharge Point 001. This location is at a similar elevation to the effluent discharge point and can contain effluent when upstream flows are minimal and the effluent is also flowing upstream. The data provided in the Draft Permit shows that the receiving water hardness is within the range of, but lower than, the effluent hardness. This could indicate that it is likely that the hardness data for the receiving water was influenced by the effluent and that the true receiving water hardness is actually lower than the four data points the Regional Board used. The Regional Board should provide all of the hardness data so that such a determination can be made.

effluent limitation was not determined using the receiving water hardness of 44 mg/L. Instead the lowest effluent hardness of 48 mg/L was used. (Draft Permit at F-16.)

Thus, the effluent limitation it is not "protective of water quality criteria under all flow conditions." As the draft permit recognizes, the "lower the hardness the lower the water quality criteria." (Draft Permit at F-14.) This is because as the hardness decreases the toxicity of the hardness-dependent metals increases. Thus, if the creek's flow was anything less than 100% effluent the criteria developed using a hardness value (of the effluent) of 48 mg/L rather than the upstream ambient hardness of 44 mg/L would not be stringent enough to prevent toxicity. This is especially concerning because there is reason to suspect that the receiving water hardness values relied upon by the Regional Board were influenced by the effluent due to the proximity of the previous upstream monitoring location to the discharge point, and that the true receiving water hardness is actually lower than the four data points used by the Regional Board. (See footnote 2, above.) Moreover, the upstream hardness data was collected from March 2, 2012 to November 7, 2012, excluding the rainy season when hardness would be expected to be lower. Failing to use the lowest receiving water hardness, and thereby providing water quality criteria protective under all flow conditions, violates the CTR, SIP, State Board orders, and Sacramento Superior Court decision.

Not only does the chosen value fail to comply with the Regional Board's mandate regarding determining protective water quality, the methodology used violates the CTR, as the Sacramento Superior Court has recognized. The Proposed Permit states that a "simple mass balance equation (Equation 2) is used to model the ambient concentrations of hardness and metals in the receiving water downstream of the discharge for all possible mixtures of effluent and upstream receiving water under all flow conditions." (Proposed Permit at F-15.) The Regional Board cited the September 2010 U.S. EPA NPDES Permit Writers' Manual for support of the use of "Equation 2." CSPA was unable to find "Equation 2" in the September 2010 U.S. EPA NPDES Permit Writers' Manual. If the Regional Board is using a modified version of one of the equations in the U.S. EPA NPDES Permit Writers' Manual it needs to explain how it came to "Equation 2."

Even if the Regional Board has used a mathematically equivalent version of one of the "mass balance" equations in the NPDES Permit Writers' Manual, those equations are to be used to conduct the reasonable potential analysis, not set the effluent limitations required under the CTR. They also require knowing the receiving water concentration of the constituent at issue, which the Regional Board has no data for because it is excusing the discharger from complying with Section 1.3 of the SIP, which requires monitoring data at least once prior to the issuance/reissuance. The mass-balance equations are not to be used to justify a less stringent effluent limitation than one that would be imposed if Regional Board complied with the SIP and CTR.

Rather than complying with the SIP, CTR and precedential State Board orders, the Regional Board has used the same methodology it used in setting effluent limitations for the Sacramento Regional County Sanitation District ("Sacramento Regional") discharge permit, a methodology rejected by the Sacramento Superior Court last year. In the Fact Sheet for the Sacramento Regional permit, the Regional Board, relying on the 2006 Emerick Study, used the lowest effluent hardness and assumed the upstream receiving water concentration was always at the

CTR criteria. (Order No. R5-2010-0114-01 at F-23.) It then generated a table nearly identical to the one included on page F-16 of the Lake of the Pines draft permit. (Compare Order No. R5-2010-0114-01 at F-24.) The Fact Sheet for the Sacramento Regional permit conceded that an effluent limitation "based on a lower hardness (e.g. lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions." (Order No. R5-2010-0114-01 at F-23 to F-24.)

The Sacramento Superior Court rejected this methodology, stating that

> it is evident that respondent Board departed from the letter of the regulatory requirements based on a concern that those requirements are stricter than really necessary...It may or may not be true that the regulation, as it currently exists, represents the most current scientific thinking. It may or may not result in unnecessarily strict limitations… If the regulation is indeed outdated, perhaps it needs to be changed. Until it is changed, however, respondent Board is obligated to comply with it. Respondent Board did not do so, and thereby abused its discretion.

Although the Regional Board was cagier this time, taking out references to the Emerick study, it is evident that it still used the same, unlawful methodology.

Nor are data or explanations regarding the reasonable potential analysis included in the Fact Sheet for any of the hardness-dependent metals other than copper and lead. Without providing the reader with the data relied upon by the Regional Board, and the methodology used, the reader has no means to ascertain the validity of the Regional Board's determination that no hardness-dependent metal other than copper has the reasonable potential to cause or contribute to an exceedance.

The proposed Permit, in Table F-5 and the corresponding conclusions on page F-16 that "[t]his example demonstrates that using a design ambient hardness of 48 mg/L to calculate the CTR criteria for lead is fully protective under the reasonable worst-case conditions described above" is overly simplistic and quite simply wrong. U.S. EPA concluded, subsequent to promulgating the CTR during its development of ambient freshwater quality criteria for copper, that the use of the hardness alone often resulted in limitations that were not fully protective of aquatic life even using the most restrictive hardness. (Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision.) The only way the Regional Board could show the metals limitations are fully protective against toxicity would be if the Regional Board considered all of the ten input parameters in the Biotic Ligand Model to calculate criteria. The U.S. EPA states in the Federal Register (Federal Register / Vol. 72, No. 35 / Thursday, February 22, 2007 / Notices, 7985) that:

> Unlike the empirically derived hardness-dependent criteria, the BLM explicitly accounts for individual water quality variables and addresses variables that EPA had not previously factored into the hardness relationship. Where the previous freshwater aquatic life criteria were hardness-dependent, these revised criteria are dependent on a number of water quality parameters (e.g., calcium, magnesium, dissolved organic carbon) described in the document. BLM-based criteria can be

> more stringent than the current hardness-based copper criteria and in certain cases the current hardness-based copper criteria may be overly stringent for particular water bodies.

Hardness based toxic metal limitations cannot be shown to be overly protective without evaluating the discharge specific impacts of temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity.

The Regional Board's duty is to comply with the regulations, and ensure that the effluent limitations are protective under all conditions. By using the effluent hardness, which is higher than the lowest observed upstream hardness, and using the mass-balance equation to justify a less stringent effluent limitation, the Regional Board has done neither. In order to comply with the law, the Regional Board must use the CTR equation with a hardness value of 44 mg/L, and provide the data and analysis for all of the hardness-dependent metals.

8. The Draft Permit fails to include an effluent limitation for cyanide despite data showing a reasonable potential to exceed a water quality standard contrary to U.S. EPA's interpretation of 40 C.F.R. section 122.44(d).

Federal regulation requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. (40 C.F.R. § 122.44(d).) U.S. EPA, interpreting 40 C.F.R. section 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002), has stated that although States will likely have unique implementation policies there are certain tenets that *may not be waived* by State procedures. These tenets include that where there is the potential to cause or contribute to an exceedance of State water quality standards (even though the data may be sparse or absent) a limit MUST be included in the permit.

The Regional Board asserted that "[r]easonable potential cannot be determined for [cyanide] because effluent data are limited or ambient background concentrations are not available." (Draft Permit at F-17.) This is false: the Regional Board has 13 cyanide effluent samples that alone indicate that the effluent has the potential to cause or contribute to an exceedance of cyanide standards. Of the 13 cyanide sample results, two were well above the chronic criterion of 5.2 µg/L; one was more than twice the chronic level and the other was more than the *acute* level of 22 2 µg/L. (Draft Permit at F-18.) Yet the Regional Board inexplicably found that there was no reasonable potential for cyanide to contribute or cause an exceedance of the cyanide limits and failed to impose an effluent limitation for cyanide.

Sections 1.2 and 1.3 of the SIP require that the Regional Board use "all available, valid, relevant, representative information" in its reasonable potential analysis. The Regional Board may only disregard data if there is "evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions."

The Regional Board's rationale for disregarding 15% of the sample data in order to avoid setting an effluent limitation is not supported by the Fact Sheet. The Draft Permit does not specify the

testing protocol(s) the Discharger used between 2010 and 2014; the Regional Board only stated that the "the Discharger is required to use sodium hydroxide to preserve cyanide samples because of the required hold time and most likely the preservative is causing false positives." (Draft Permit at F-18.)

The Draft Permit requires that the Discharger analyze cyanide "using the analytical methods described in 40 C.F.R. part 136,"[3] which the Regional Board has characterized as the "analytical methods that provide the best feasible detection limits." (Draft Permit at E-4 and E-5; F-17.) The previous permit likewise required that the Discharger use "the analytical methods described in 40 CFR part 136." (Order R5-2009-0031 at page E-5.) The EPA revised 40 C.F.R. part 136 in 2007 and 2012.[4] The Regional Board has failed to explain why the analytical methods used in 2013, presumably the ones established by the U.S. EPA in 2012 and still in effect, required under the Draft Permit, and which indicated an effluent cyanide concentration of 11 µg/L, are not the "analytical methods that provide the best feasible detection limits." The Regional Board cannot simultaneously reject the testing data due to an alleged problem with the testing methodology and characterize the same testing methodology as the "analytical methods that provide the best feasible detection limits."

Moreover, the Regional Board also fails to explain why, if the Discharger is required to use sodium hydroxide to preserve *all* of its samples, only these two samples had "false positives." The Regional Board also fails to consider well-known sources of cyanide that support the accuracy of the high cyanide test results. The area surrounding Lake of the Pines is an area extensively mined in the past; there have been approximately 125 mines in Nevada County, and the Basin Plan notes that "[w]ithin the past decade there has been a significant increase in the amount of gold extraction" in the area and that these mining operations use cyanide. (http://california.hometownlocator.com/features/cultural,class,mine,scfips,06057.cfm; Basin Plan at IV-4.00.) Cyanide is a common legacy pollutant from past mining operations. (See e.g., http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/1237/report/F.) Cyanide has been used by the mining industry to separate gold and silver particles from ore for over 120 years. (See, e.g., http://www.miningfacts.org/environment/what-is-the-role-of-cyanide-in-mining/.) The Regional Board also disregards the fact that cyanide can be a byproduct of wastewater treatment itself. (See, e.g., "Factors Affecting Cyanide Generation in Chlorinated Wastewater Effluent Matrix," Pandit, Young, and Pang.)

The preponderance of evidence clearly indicates the potential for cyanide to cause or contribute to an exceedance of State water quality standards. The Regional Board must make a reasonable

[3] The Draft Permit also allows for unspecified "methods approved by the Central Valley Water Board or the State Water Board." (Draft Permit at E-4 and E-5.)

[4] In 1999 the EPA approved the Method OIA-16777 cyanide test procedures to make testing "more precise and accurate" in recognition that previous methods were "subject to test interference." (64 Fed. Reg. No. 250 at 73414.) In 2007 the EPA again addressed cyanide testing methodology, including "adding text that describes procedures that are recommended for removal or suppression of cyanide interferences." (72 Fed. Reg. No. 47 at 11203.) In 2012 the EPA revised the methods again to "describe options available when the interference or suppression of interference mitigation instructions in D7365-09a are not effective, and to allow the use of any technique for removal or suppression of interference, provided the laboratory demonstrates and documents that the alternate technique more accurately measures cyanide through quality control measures described in the analytical test method." (77 Fed. Reg. No. 97 at 29761.)

potential determination consistent with the evidence and include an effluent limitation in the permit.

9. The Draft Permit is based on a reasonable potential analysis that failed to use all available, valid, relevant, representative data and information as required by 40 C.F.R. section 122.44(d) and the SIP.

The proposed Permit, page F-13, states that:

> SIP section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP. The Discharger collected a fourth quarter priority pollutant effluent sample on 7 November 2012 during the time that they were cleaning the MBR with bleach and diverting the discharge to Pond 1. The Discharger regularly cleans the MBR overnight and the following day the plant effluent is diverted through the effluent bypass line to the storage ponds until the effluent chlorine monitor detects zero mg/L of chlorine. By collecting a sample during this process the analytical results contained elevated constituent concentrations of the following above their respective criterion: antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury. The remaining three quarterly priority pollutant samples for these constituents were below their respective criterions. Therefore, effluent data collected on 7 November 2012 is not representative of the Facility's typical functional capabilities and was not considered in the RPA for evaluating antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury.

The statement suggests that chlorine would somehow result in the false presence of antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, dichlorobromomethane, and mercury. Chlorine is a strong oxidizing agent and would not result in increased or false detections of antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride or mercury. The presence of chlorine could have resulted in the formation of the trihalomethanes, chloroform and dichlorobromomethane.

Federal Regulations, 40 C.F.R. part 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. U.S. EPA has interpreted 40 C.F.R. part 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) to mandate that although states will likely have unique implementation policies there are certain tenets that may not be waived by state procedures. These tenets include that where there is the potential to cause or contribute to an exceedance of State water quality standards (even though the data may be sparse or absent) a limit MUST be included in the permit.

Moreover, while the discharger may divert the effluent the day following the cleaning to the storage ponds, the water in the storage ponds returns to the system to be eventually discharged to Magnolia Creek. The Regional Board has therefore not provided an explanation why the effluent should not be tested for those constituents for which there is data indicating elevated levels of these substances, even assuming those substances are a result of the cleaning of the system.

The Draft Permit cites Section 1.2 of the SIP as allowing discretion to determine if data are inappropriate yet fails to cite that this same section of the SIP requires the Regional Board "use all available, valid, relevant, representative data and information…" The Regional Board has abused its discretion and not presented any reasonable argument or scientific evidence to invalidate the use of the data for antimony, bis (2-ethylhexyl) phthalate, carbon tetrachloride or mercury. The Regional Board must make a reasonable potential determination using this data and impose limitations where a reasonable potential exists.

10. The Regional Board failed to justify using the more lenient recalculation procedure in setting effluent limitations for ammonia.

The Regional Board correctly found that a reasonable potential exists for the discharge to cause or contribute to an in-stream excursion above the NAWQC. (Draft Permit at F-21.) However, the evidence in the record does not support the Regional Board's use of the more lenient recalculation procedure set by the EPA.

The 2013 U.S. EPA NAWQC update for the protection of freshwater aquatic life for total ammonia found that as pH and temperature increased, both the acute and chronic toxicity of ammonia increased for invertebrates. The 2013 U.S. EPA NAWQC update allows that "*where a state demonstrates that mussels are not present on a site-specific basis,* the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site." ("Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater" at 225 (emphasis added).)

The Regional Board failed to "demonstrate that mussels are not present" in Magnolia Creek, and therefore unlawfully removed the mussel species from the national criteria dataset in setting the effluent limitations for ammonia. The 2013 update indicates that analysis must be made as to whether any bivalves similar to the unionid mussels *Lampsilis* and *Villosa* exist in the vicinity of the discharge. ("Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater" at 225.) The update also warns that "states should consider how they will demonstrate that mussels are not present at the site before selecting this approach." (*Id.* at 226.) The EPA also warns that states must consider not just the immediate vicinity of the discharge but also impacts downstream of the discharge. (*Id.*)

Although the Draft Permit cites to a Nature Conservancy study, it concedes that the "*study does not contain any survey information for Magnolia Creek*." (Draft Permit at F-19 (emphasis added).) The Regional Board also admits that it has not determined the "best way to evaluate receiving waters within the Central Valley for the presence of mussels." (*Id.*) In other words, the Draft Permit contains not a scintilla of evidence "demonstrating" that mussels are not present. Ignorance is neither evidence nor a rational basis for using less stringent effluent limitations.

Until there is actual evidence that mussels are not present in Magnolia Creek, or downstream, the Regional Board must use the more stringent criteria in order to protect the freshwater aquatic life, and recalculate the effluent limitations based on the most stringent criteria.

For all of the above reasons, the Draft Permit should be revised and recirculated for additional public comment.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

Bill Jennings, Executive Director
California Sportfishing Protection Alliance

Attachments:
Att1: 1999 Federal Register re: testing protocol
Att2: 2007 Federal Register re: testing protocol
Att3: 2012 Federal Register re: testing protocol
Att4: Aquatic Life Ambient Water Quality Criteria for Ammonia, Freshwater 2013
Att5: City of Davis WQO
Att6: Factors affecting cyanide sampling
Att7: Final Report Low Level Speciation of Cyanide in Waters Research Project Database NCER ORD US EPA
Att8: Nevada County California Mines
Att9: Nevada County California Mines, part 2
Att10: Peracetic acid as a disinfectant
Att11: pH introduction, CADDIS, Sources, Stressors & Responses, USEPA
Att12: r5-2010-0114-01
Att13: Sac Regional Ruling
Att14: Temperature effects on salmonids
Att15: What is the role of cyanide in mining, Mining Facts